

ABSTRACT

Flexible, bioactive glass meshes and scaffolds made therefrom are provided. The meshes comprise interwoven bioactive glass fibers that can be coated with resorbable polymers. Meshes can also be woven from glass fibers and resorbable polymers. Scaffolds can be constructed by a plurality of meshes, which can have varying porosities to create porosity gradients in the scaffold. Methods of making scaffolds are provided which can comprise pulling bioactive glass fibers, winding the fibers, forming the fibers into bundles, coating the fibers with a resorbable polymer, and creating a biaxial weave with the bundles. Soft tissue engineering methods are also provided for creating scaffolds for incubating cells such as fibroblasts and chondroblasts. Meshes and scaffolds are suitable for tissue engineering, such as bone tissue engineering and cartilage tissue engineering.